

**City of  
Bellevue**



# Transportation Commission Study Session

**DATE:** September 6, 2017

**TO:** Chair Bishop and Members of the Transportation Commission

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**SUBJECT:** Level-of-Service in Bellevue – Toward a Multimodal Approach to Mobility

## DIRECTION REQUESTED

**Action (Approve recommended metrics and standards)**

☒ Discussion (Review and discuss prioritization and implementation)

☐ Information

On April 13, 2017, the Transportation Commission approved a recommendation that would establish metrics, standards and guidelines for vehicle, pedestrian, bicycle and transit modes. A table in Attachment 1 summarizes the Commission's recommendation.

At the study session on September 14, 2017, staff and the consultants at Fehr & Peers will review the Commission's recommendation and will describe the next steps toward a multimodal approach to mobility.

## BACKGROUND

On the direction from Council, the Commission has held a number of study sessions on MMLOS, the agenda memos and presentations for which provide background on the development of a recommendation. Please also refer to the minutes for each meeting – these are available at the [Transportation Commission](https://transportation.bellevuewa.gov/planning/transportation-commission) web site.

<https://transportation.bellevuewa.gov/planning/transportation-commission>

- Please refer to [the March 10, 2016](#) study session agenda memo, and the [presentation](#), for extensive background information. The memo refers to existing policy support for multimodal level of service and provides staff recommendations on metrics for each mode.
- Refer to the [agenda memo](#) and [presentation](#) materials for the September 22, 2016 MMLOS workshop.
- Refer to the [agenda memo](#) and [presentation](#) materials for the December 8, 2016 MMLOS study session.
- Refer to the [agenda memo](#) and [presentation materials](#) for the March 23, 2017 MMLOS workshop.
- Refer to the [agenda memo](#) and [presentation materials](#) for the April 13, 2017 MMLOS study session. At this meeting the Transportation Commission approved the final recommendation.

## INFORMATION

### Phase 1 - MMLOS Metrics and Standards

Recommended MMLOS metrics and standards approved on April 13, 2017 are as follows:

#### Vehicle Mode

- Retain existing LOS metrics and standards for transportation concurrency evaluation and long-range planning analysis.
- Include a new travel time/speed-based performance metric along arterials to assist in identifying and prioritizing congestion-relief projects.

#### Pedestrian Mode

Pedestrian level-of-service metrics and standards focus on achieving the intended quality of the pedestrian environment by providing pedestrian facilities to match the context, unlike the quantitative intersection congestion metric used for vehicle level-of-service. Pedestrian mode metrics and LOS standards/guidelines are applicable to the “pedestrian network” along arterials identified in the Pedestrian and Bicycle Transportation Plan (2009).

#### Bicycle Mode

Bicycle mode level-of-service considers the characteristics of the roadway, particularly the vehicle volume and speed, and the type of bicycle rider, to establish the metrics and the LOS

guidelines that are intended to create a safe and comfortable bicycling environment. The recommended level-of-service is met by matching the type of bicycle facility to the character of the roadway segment to achieve the desired quality of the bicycle riding experience the level of traffic stress. Bicycle mode metrics and LOS guidelines are applicable to the arterial “bicycle network” as identified in the Pedestrian and Bicycle Transportation Plan (2009), or as modified through the Pedestrian and Bicycle Implementation Initiative or other superseding plans.

### **Transit Mode**

Transit mode metrics and LOS guidelines are established only for the components of transit service over which the City has control; such as transit rider access, transit stop/station components, and some speed and reliability factors on Frequent Transit Network corridors, as identified in the Transit Master Plan and the Downtown Transportation Plan.

### **MMLOS Report**

A summary MMLOS document will be available for your desk packet on September 14, 2017. This document contains the recommended LOS metrics, standards and guidelines for each mode. It also contains a summary of the next steps toward identifying specific updates to the city Transportation Design Manual, and potential amendments to the Comprehensive Plan and the Transportation Code (BCC Title 14). Updates to the Design Manual are administrative and preliminary work is already underway.

### **PHASE 2 - Using MMLOS to Identify, Prioritize and Fund Projects**

The next phase of the MMLOS work will further define the way MMLOS tools will be used to help in the scoping, planning, designing, implementing, operating and maintaining projects on street corridors and networks in Bellevue. Such an approach ties MMLOS directly to the Complete Streets and Vision Zero policy framework, and may guide the development of the Transportation Facilities Plan and the Capital Investments Program.

MMLOS Phase 2 builds on the Commission’s recommendation for metrics, standards and guidelines to integrate MMLOS into the City’s long-range transportation planning, development review, concurrency and capital programming process. This work will also identify a method to reconcile the potential challenges to achieving the intended level-of-service for each mode. Tradeoffs may be necessary and a transparent documentation of the project evaluation and the decision-making process will be an essential component of communication with the community and elected officials.

A summary of the MMLOS Phase 2 scope of work is as follows:

#### **What Project to Build? (Creating a Project List)**

The answer to the “What project to build?” question for each facility type is essentially the outcome of a gap analysis that consists of three steps – 1) Identify the expected LOS for each mode, 2) Consider the components or facility type needed to attain the expected LOS, and 3)

Document how the preferred components/facility type compares to the existing conditions. If Step 3 reveals a gap, then a project may be identified to fill the gap.

When considering projects related to system performance metrics such as corridor travel time/speed or transit speed, Step 2 would document the departure of existing/anticipated conditions from the expected LOS, and Step 3 would identify the components or type of facility needed to meet the expected LOS.

### **Acknowledging and Analyzing Trade-offs (Addressing physical or budget constraints)**

While a gap analysis to identify projects may be straightforward, planning for project implementation may reveal constraints. A goals/prioritization framework can help inform a decision on the type of project to be built on constrained corridors where there is insufficient right-of-way to meet LOS standards and guidelines for any or all modes, or if there are environmental considerations or budget constraints. Such challenges will inspire creativity to provide the intended level-of-service, facility type or mobility option for all modes, and MMLOS may provide the tools to make choices, whether that choice is to favor one project versus another, or to find compromise design solutions.

A goals/prioritization framework will balance the MMLOS recommendations for multiple modes. A goals/prioritization framework will be based on the project context—considering adjacent land uses, priorities identified in the City’s modal plans, policies in the Comprehensive Plan, and other factors.

### **What is the benefit/to whom? (Addressing modal beneficiaries)**

Challenges arise when right-of-way, funding or other constraints preclude the ability to fully meet MMLOS standards and guidelines. The answer to “What Project to Build” for each mode may not be as straightforward as implementing the standards and guidelines.

In a complex, multimodal urban environment, mobility improvement for users of one mode may change - to either improve or degrade - the level-of-service for another mode. For example, an intersection widening project intended to improve the level-of-service for vehicles and improve transit speed along a corridor, may make it harder for pedestrians to cross the street and thus degrade the level-of-service for them. In some settings, such as Downtown, policy may guide the decision-making process for modal priority. We will explore other ways to help identify mobility tradeoffs and to help describe the benefit of a project, and to whom.

### **Project Prioritization – When to Build It?**

The response to the “When to Build It” question will require an objective way to prioritize projects. Criteria could be used primarily to compare the urgency of a project on one corridor or intersection versus another, or potentially between projects for different modes in the same location. We will develop a prioritization criteria to guide the City in making decisions on when to implement one MMLOS project relative to another, similar to the criteria tools used in the

current TFP/CIP process. Potential elements that could be included as prioritization criteria include synergy between modes that may simultaneously benefit, the significance of the gap, policy considerations, expected utilization of the facility, existing or intended adjacent land uses and density, geographic equity, socioeconomic equity, etc.

### **Project Implementation – Criteria, Funding and Development Review**

Several options are currently available to implement MMLOS projects that are identified and prioritized. In this section we will devise ways to answer the, “With What Resources” are the projects built. Types of resources that could be considered include:

- TIP/TFP/CIP – Incorporate MMLOS metrics, standards and guidelines in the criteria used to evaluate candidate projects for these institutional transportation planning and project funding documents. Ongoing CIP programs, such as the Neighborhood Sidewalk Program and the Downtown Transportation Plan Implementation Program, may also incorporate MMLOS criteria into project planning and prioritization.
- Development Review – Explore any changes and details that may be needed to amend city documents - such as the Traffic Standards Code and Transportation Design Manual - that provide authority to city staff to require MMLOS transportation system improvements as conditions of development approval, including off-site mitigation to support multimodal improvements.
- Impact Fees – Outline how the existing impact fee program that is used exclusively for vehicle capacity projects, could be expanded to support implementation of off-site MMLOS projects. We will look at the experience of other cities that have incorporated multimodal projects into their impact fee programs, including Redmond and Kirkland that are planning under GMA, as well as Portland and possibly other peer cities.

### **ATTACHMENT**

Transportation Commission MMLOS Recommendation Summary Table

## Attachment 1

MMLOS SUMMARY			
Transportation Commission Approved April 13, 2017			
Mode	LOS Metric	LOS Standard	LOS Guideline
Vehicle	Volume/Capacity or Average Delay at Intersections	V/C: 0.80-0.95. Delay: 20-80 sec. Varies by land use context	
	Typical Urban Travel Time/Speed on Arterials		Percent of posted speed limit, LOS varies by neighborhood context
Pedestrian	Sidewalk and Landscape Width	12-20 feet Varies by land use context	
	Pedestrian Comfort, Access and Safety at Intersections		Design varies by land use context
Bicycle	Level of Traffic Stress on Corridors		Design to achieve LTS varies by roadway traffic speed and volume
	Level of Traffic Stress at Intersections		Maintain corridor LTS at intersections. Design components vary by context
Transit	Passenger Comfort, Access and Safety		Varies by transit stop/station typology
	Transit Travel Speed on Corridors		14 mph on Frequent Transit Network corridors between activity centers